

REMARKS

Claims 1-6, 9, 10, 12, 14-16, 18, 19 and 21 are currently pending in the subject application and are presently under consideration. Claims 1, 5, 6, 9, 10, 14, 18, 19 and 21 have been amended, claims 15 and 16 have been canceled without prejudice, and claims 22-32 have been added. All of the amendments are fully supported throughout the specification. Thus, after entry of the amendments, claims 1-6, 9, 10, 12, 14, 18, 19 and 21-32 will be pending in the application.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 6, 14-16, 18 and 19 Under 35 U.S.C. §112

Claims 6, 14-16, 18 and 19 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter.

This rejection is moot with respect to claims 15 and 16 due to their cancellation, as noted above.

With regard to claim 6, as suggested by the Examiner, Applicant has amended the claim to replace "compressed frame packet" with -- compressed framed packet --. Thus, this rejection is now moot.

With regard to claim 14, Applicant has amended the claim as discussed in more detail below, and based on the amendment this rejection is now moot.

With regard to claims 18 and 19, Applicant has replaced the identified instances of the phrase "a multicast Internet Protocol address" with -- the multicast address -- to maintain proper antecedent basis with previously discussed terminology in the respective claims. Thus, this rejection is now moot.

Further, with regard to claims 18 and 19, the second IP packet is explained throughout the specification (see, e.g., paragraph 1075 or 1080) in a manner understood by one skilled in the art. As such, claims 18 and 19 are definite and distinct. Thus, Applicant respectfully requests the Examiner to withdraw this rejection.

Additionally, based on the above remarks overcoming the 35 U.S.C. §112 rejection of claims 18 and 19, and considering that no other rejections exist with respect to these claims, Applicant respectfully requests the Examiner to allow claims 18 and 19.

II. Rejection of Claims 1-3 and 9 Under 35 U.S.C. §102(e)

Claims 1-3 and 9 stand rejected under 35 U.S.C. §102(e) as being anticipated by Hagirahim, et al. US 6,751,218.

Applicant respectfully traverses this rejection, as Hagirahim fails to disclose or suggest a method or means for building a multicast tree including initiating a registration chain including nodes from the first termination node to the broadcast source node, wherein the first termination node and each successive node in the system approaching the broadcast source node in the registration chain registers with an adjacent node until reaching a node already registered with respect to the broadcast transmission, as recited by these claims. Support for the recited subject matter may be found throughout the specification (see, e.g., paragraph 1074).

In contrast to the recited subject matter involving building a multicast tree by initiating a registration chain from a first termination node, Hagirahim discloses a system where a controller maintains various communication-related addresses input into the system by an IP service provider. In particular,

[T]he IP service provider has entered pairs of addresses, each composed of individual ATM subscriber address and an individual IP address, in the Multicast lookup table 51 at the earlier time and at the request of the data provider. (col. 4, lines 54-58).

In addition to the pairs of ATM/IP addresses, the provider has entered the IP Multicast Assigned Address and the Multicast Access address in the controller 31. (col. 4, lines 60-63).

The Examiner attempts to argue that the system of Hagirahim somehow determines the addresses contained in the Multicast lookup table 51 (Office Action, page 3, last paragraph), however, such argument is clearly contrary to the explicit disclosure of Hagirahim.

Thus, rather than disclosing the recited subject matter involving building a multicast tree by initiating a registration chain from a first termination node, Hagirahim instead discloses an IP service provider supplying the addresses.

Therefore, as Hagirahim does not disclose or suggest the recited subject matter, Applicant respectfully requests the Examiner to withdraw the rejection of claims 1-3 and 9 under 35 U.S.C. §102(e) as being anticipated by Hagirahim.

III. Rejection of Claim 4 Under 35 U.S.C. §103(a)

Claim 4 stands rejected under 35 U.S.C. §103(a) as being obvious over Hagirahim, et al. US 6,751,218 in view of Eyuboglu, et al. US 6,781,999.

Applicant respectfully traverses this rejection, as any combination of Hagirahim and Eyuboglu fails to disclose or suggest a method for building a multicast tree including initiating a registration chain including nodes from the first termination node to the broadcast source node, wherein the first termination node and each successive node in the system approaching the broadcast source node in the registration chain registers with an adjacent node until reaching a node already registered with respect to the broadcast transmission, as recited by independent claim 1, from which claim 4 depends.

The deficiencies of Hagirahim are described in detail above, and the addition of Eyuboglu does not cure these deficiencies. In particular, in contrast to the recited subject matter, Eyuboglu is silent with respect to initiating a registration chain successively formed back toward a broadcast source node from a termination node until a registered node is reached. Thus, Eyuboglu does not cure the deficiencies of Hagirahim.

Additionally, the Examiner has not made a prima facie rejection, as there is no motivation to combine Hagirahim and Eyuboglu. Hagirahim deals with compatibility problems between ATM and IP multicasting protocols. (col. 1, lines

28-34). Hagirahim solves this problem by "having a controller in the IP backbone translate a pre-stored Multicast Initiating Address into a multiplicity of pre-stored pairs of addresses, each pair composed of a user's ATM destination address and the IP address of the (user) gateway serving the user's ATM destination." (col. 1, lines 39-46). In contrast, Eyuboglu is concerned with supporting broadcasting and multicasting in a wireless network based on IS-856. (col. 2, lines 37-40). In particular, Eyuboglu provides a method of efficiently using a common control channel of IS-856 wireless network to deliver multicast packets having a particular Access Terminal Identifier (ATI) specified in an air link address. (col. 1, lines 53-57). As such, a combination of these two references would be inoperable, as one reference involves translating between protocols while the other involves a method strictly using one protocol.

Therefore, based on these remarks, Applicant respectfully requests the Examiner to withdraw the rejection of claim 4 under 35 U.S.C. §103(a) as being obvious over Hagirahim in view of Eyuboglu.

IV. Rejection of Claim 5 Under 35 U.S.C. §103(a)

Claim 5 stands rejected under 35 U.S.C. §103(a) as being obvious over Hagirahim, et al. US 6,751,218 in view of Eyuboglu, et al. US 6,781,999 and further in view of Sato, et al. US 6,895,216.

Applicant respectfully traverses this rejection, as any combination of Hagirahim, Eyuboglu and Sato fails to disclose or suggest a method for building a multicast tree including initiating a registration chain including nodes from the first termination node to the broadcast source node, wherein the first termination node and each successive node in the system approaching the broadcast source node in the registration chain registers with an adjacent node until reaching a node already registered with respect to the broadcast transmission, as recited by independent claim 1, from which claim 5 depends.

The deficiencies of Hagirahim and Eyuboglu are detailed above, and the addition of Sato fails to cure these deficiencies. Sato is silent with respect to the recited building a multicast tree by initiating a registration chain from a first

termination node successively back to the broadcast source node until a registered node is reached. Thus, Sato does not cure the deficiencies of Hagirahim and Eyuboglu.

Further, the Examiner has not made a prima facie rejection, as there is no motivation to combine Hagirahim, Eyuboglu and Sato. The lack of motivation to combine Hagirahim and Eyuboglu is discussed above. There is further lack to combine either of these two cases with Sato. Sato deals with the problem of reception quality of multicast information experienced by wireless terminals having varying reception conditions. (col. 1, line 66 to col. 2, line 3). Sato solves this problem providing a method of delivering multicast information having the same content, but differing transmission conditions, to the wireless terminals. (col. 2, lines 26-33). As such, due to their differing areas of focus, there is no motivation to combine these references.

Therefore, based on these remarks, Applicant respectfully requests the Examiner to withdraw the rejection of claim 5 under 35 U.S.C. §103(a) as being obvious over Hagirahim in view of Eyuboglu and further in view of Sato.

V. Rejection of Claims 6 and 14-16 Under 35 U.S.C. §103(a)

Claims 6 and 14-16 stand rejected under 35 U.S.C. §103(a) as being obvious over Eyuboglu, et al. US 6,781,999 in view of Sato, et al. US 6,895,216.

This rejection is moot with respect to claims 15 and 16 due to their cancellation, as noted above.

Applicant respectfully traverses this rejection, as any combination of Eyuboglu and Sato fails to disclose or suggest a method or means for receiving an Internet Protocol packet at a packet data service node, the Internet Protocol packet encapsulating a broadcast message, where the Internet Protocol packet has a destination address comprising a multicast Internet Protocol address, compressing, framing and encapsulating as stated, and further encapsulating the encapsulated compressed framed packet according to a multicast Internet Protocol to form a multicast compressed framed packet with a destination address corresponding to the multicast Internet Protocol address from the

Internet Protocol packet, as recited by independent claims 6 and 14. Support for the recited subject matter may be found throughout the specification (see, e.g., paragraph 1072).

In contrast to the recited subject matter and as noted by the Examiner, Eyuboglu discloses PDSN 100 that receives an IP packet belonging to a multicast group, encapsulates it in a Simple Link Layer frame, and sends it over a special A10 multicast tunnel 122 to a respective RNC, which is set up for every multicast group having at least one member served by the respective RNC. (col. 9, lines 22-33). Eyuboglu does not disclose or suggest the further encapsulating of the encapsulated compressed framed packet according to a multicast Internet Protocol to form a multicast compressed framed packet with a destination address corresponding to the multicast Internet Protocol address from the Internet Protocol packet, as recited by independent claims 6 and 14. The Examiner argues that Eyuboglu discloses both encapsulating processes, however, the encapsulating performed by the RNC (col. 10, lines 11-31) are not relevant to the PDSN, and the discussion of control data fragments 42 (col. 3, line 48 to col. 4, line 26) also is not relevant. As noted above, the Simple Link Layer framing and transmission across A10 tunnel 122 do not disclose or suggest the recited subject matter. Further, by disclosing the special A10 tunnels, Eyuboglu further departs from the present invention by implying that an address different from the multicast IP address from the IP packet is used for the tunneling transmission.

Additionally, as admitted by the Examiner, Eyuboglu fails to disclose or suggest the recited compressing.

Sato fails to make up for the deficiencies of Eyuboglu. In particular, Sato is silent with respect to, and thus does not disclose or suggest, the further encapsulating of the encapsulated compressed framed packet according to a multicast Internet Protocol to form a multicast compressed framed packet with a destination address corresponding to the multicast Internet Protocol address from the Internet Protocol packet, as recited by independent claims 6 and 14. Additionally, there is no motivation for Sato to even deal with the PDSN

processing means and methods, as Sato is focused on the communication between a base station and a wireless terminal and does not refer to a PDSN.

Additionally, while the Examiner may argue that Sato generally discloses compression of multicast information, the disclosure of Sato is not in the context of the recited subject matter and thus is not relevant to the claims as a whole.

Therefore, based on these remarks, Applicant respectfully requests the Examiner to withdraw the rejection of claims 6 and 14 under 35 U.S.C. §103(a) as being obvious over Eyuboglu and further in view of Sato.

VI. Rejection of Claims 10 and 12 Under 35 U.S.C. §103(a)

Claims 10 and 12 stand rejected under 35 U.S.C. §103(a) as being obvious over Eyuboglu, et al. US 6,781,999 in view of Lim US 6,801,508 and further in view of Sato, et al. US 6,895,216.

Applicant respectfully traverses this rejection, as any combination of Eyuboglu, Lim and Sato fails to disclose or suggest a packet control function node or a second multicast tree portion operable to generate and transmit at least one unicast packet based on the multicast compressed framed packet, wherein the at least one unicast packet is addressed to at least one unicast address corresponding to a base station, as recited by claims 10 and 12. Support for the recited subject matter may be found throughout the specification (see, e.g., paragraphs 1078 and 1080).

In contrast to the recited subject matter, Eyuboglu discloses that the RNC, which the Examiner has stated performs the same function of the packet control function node, receives a multicast packet, de-tunnels it to obtain link layer frames, and then sends the link layer frames over the IS-856 common control channel using a Multicast ATI. (col. 10, lines 11-16). As such, Eyuboglu does not mention or even suggest the recited subject matter, but instead describes a desired solution for a method of efficiently using a common control channel of IS-856 wireless network to deliver multicast packets having a particular Access Terminal Identifier (ATI) specified in an air link address. (col. 1, lines 53-57), thereby solving the concern of Eyuboglu.

The Examiner argues (relating to claim 21) that Eyuboglu discloses the RNC tunneling unicast copies of airlink frames carrying the IP packets to RNs, however, the multicast packet 140 of Eyuboglu is not the recited multicast compressed framed packet. In particular, the recited multicast compressed framed packet is based on the broadcast message, and is addressed to the multicast Internet Protocol address provided by the broadcast message. As noted previously, Eyuboglu discloses that PDSN 100 applies the Simple Link Layer framing and transmission across A10 tunnel 122 to RNC (col. 9, lines 22-33), thereby implying that an address different from the multicast IP address from the IP packet is used for the tunneling transmission.

Lim also fails to disclose or suggest the recited subject matter. While Lim may disclose that an RNC functions similarly to a packet control function node, the many deficiencies of Eyuboglu noted above remain unaddressed by Lim.

The further addition of Sato fails to make up for the deficiencies of Eyuboglu and Lim. As noted previously, while the Examiner may argue that Sato generally discloses compression of multicast information, the disclosure of Sato is not in the context of the recited subject matter and thus is not relevant to the claims as a whole. As such, Sato does not disclose or suggest the recited subject matter.

As such, any combination of Eyuboglu, Lin and Sato fails to disclose or suggest the recited subject matter of claims 10 and 12.

Therefore, based on these remarks, Applicant respectfully requests the Examiner to withdraw the rejection of claims 10 and 12 under 35 U.S.C. §103(a) as being obvious over Eyuboglu and further in view of Sato.

VII. Rejection of Claim 21 Under 35 U.S.C. §103(a)

Claim 21 stands rejected under 35 U.S.C. §103(a) as being obvious over Eyuboglu, et al. US 6,781,999 in view of Lim US 6,801,508.

Applicant respectfully traverses this rejection, as any combination of Eyuboglu and Lim at least fails to disclose or suggest a second multicast tree portion operable to generate and transmit at least one unicast packet based on

the multicast compressed framed packet, wherein the at least one unicast packet is addressed to at least one unicast address corresponding to a base station, as recited by claim 21.

The deficiencies of Eyuboglu and Lim with respect to this recited subject matter are discussed in detail above with respect to claims 10 and 12, and are likewise applicable to claim 21.

Therefore, based on these remarks, Applicant respectfully requests the Examiner to withdraw the rejection of claim 21 under 35 U.S.C. §103(a) as being obvious over Eyuboglu and further in view of Lim.

VIII. New Claims

Applicant has added new claims 22-32 to recite subject matter to which Applicant is entitled. Support for these claims may be found throughout the specification. Further, each of these claims is not disclosed or suggested by the cited references.

In particular, new claims 22-24 depend from independent claim 1, and thus are allowable for at least the same reasons.

Additionally, claims 22-24 separately recite patentable subject matter. In particular, claim 22 recites a method of duplicating packets at an anchor BSC node (see, e.g. paragraphs 1073 and 1089), which is not disclosed or suggested by the cited references. Further, for example, claims 23 and 24 recite that the broadcast message comprises a multiplexed HSBS channel (see, e.g. paragraph 1039), which is not disclosed or suggested by the cited references.

Further, claim 25 is an independent claim having subject matter similar to that presented in the method of claim 1, and thus is allowable for at least the same reasons.

Claims 26-28 depend from claim 25, and thus are also allowable for at least the same reasons.

Further, claims 26-28 separately recite patentable subject matter. In particular, claim 26 recites a means for duplicating and transmitting packets associated with an anchor node (see, e.g. paragraphs 1073 and 1089), which is

not disclosed or suggested by the cited references. Further, for example, claims 27 and 28 recite that the broadcast message comprises a multiplexed HSBS channel (see, e.g. paragraph 1039), which is not disclosed or suggested by the cited references.

Additionally, claims 29-32 depend from claim 10, and thus are allowable for at least the same reasons presented above with respect to claim 10.

Further, claims 29-32 separately recite patentable subject matter. In particular, claim 29 relates to building a multicast tree, similar to the subject matter of portions of claim 1 and allowable for at least the same reasons. Also, claim 30 relates to anchor and neighboring BSCs (see, e.g. paragraphs 1073 and 1089), which are not disclosed or suggested by the cited references. Further, for example, claims 31 and 32 recite that the broadcast message comprises a multiplexed HSBS channel (see, e.g. paragraph 1039), which is not disclosed or suggested by the cited references.

Thus, Applicant respectfully requests the allowance of claims 22-32

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 17-0026.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,

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